Stepped Care Treatment for Depression and Anxiety in Primary Care

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Chapter 7

Perceived Need for Mental Health Care and Personality among Primary Care Patients

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Abstract

Background

Although there are many forms of effective, evidence-based treatments for patients with depressive and anxiety disorders, many patients do not seek any help. Personality characteristics are associated with increased use of mental health services. The objective of this study is to examine whether personality traits are also related to patients' perceived need for (a specific type of) mental health care.

Methods

Cross-sectional data were derived from the Netherlands Study of Depression and Anxiety (NESDA). A total of 762 patients recruited from primary care diagnosed with one or more DSM-IV diagnoses were included. Perceived need for mental health care was assessed with the Perceived Need for Care Questionnaire (PNCQ) and personality traits were assessed with the NEO-Five Factor Inventory (NEO-FFI).

Results

We found indications that personality traits, in particular neuroticism and openness to experience, have an impact on care needs. Patients with higher scores on these traits were more likely to have a perceived need for care, irrespective of whether this need was met or not. Extraversion, agreeableness and conscientiousness were largely unrelated to perceived need for care.

Conclusions

Personality has an impact on a person's need for care, regardless of the severity of anxiety and depression. When patients have higher levels of neuroticism or higher levels of openness to experience, they most likely are in need of counseling. Future research should point out whether perceived unmet need is justified from a professional perspective: is perceived need also necessary need?

Background

Depressive and anxiety disorders are both highly prevalent.[1] Both can cause serious impairment and reduction in quality of life.[2,3] Depression and anxiety also lead to huge economic costs due to health care utilization and productivity losses.[4-6] Therefore, it is important to treat these disorders adequately.

Although there are many forms of effective, evidence-based treatments for patients with depressive and anxiety disorders, many patients do not seek any help. It is estimated that this is true for about forty percent of cases.[7,8] There might be several reasons why patients do not seek treatment for their symptoms. For example, patients had negative experience with mental health care, do not experience mental health problems ("I don't need help, there is nothing wrong with me") or experience the influence of stigma on help-seeking behavior. Previous studies provide some explanations for help-seeking behavior. For example, the beliefs that mental health problems have adverse consequences and that treatment can help, increases the likelihood that patients seek help.[9] Sociocultural factors also appear to influence help-seeking behavior[10], for instance the recommendations of significant others affect the choice which care-path to follow. Seeking help for depressive and/or anxiety disorders is furthermore related to the coping style of the patient. A study that investigated the role of personality traits in the actions taken to cope with a depressed mood found that people who had a high score on neuroticism used more coping actions (including seeking professional help).[11]

The association between personality and psychopathology has been well established. A recent meta-analysis[12] showed that anxiety and depression were strongly associated with neuroticism (mean Cohen's d = 1.65). In particular, major depressive disorder was associated with high neuroticism (Cohen's d = 1.33) and also with low conscientiousness (d = -0.90). Social phobia was associated with low extraversion (d = -1.31), whereas agreeableness and openness were largely unrelated to anxiety and depression.

Personality characteristics may also determine increased use of mental health services. Previous studies demonstrated that neuroticism has an independent effect on whether or not people use primary care and specialized mental health care for mental health problems.[13,14] However, after entry into primary care, neuroticism had no effect on the number of visits.[14] Verhaak et al.[15] also found that patients who received treatment scored higher on neuroticism than patients who did not. However, this independent effect disappeared when adjusted for clinical variables (severity, comorbidity and patients perception of a psychological problem). Furthermore, they concluded that the patient's own perceived need for care is of decisive importance for help seeking in primary care.

Because there are associations between personality, coping with stressors and use of mental services, the objective of this study is to examine whether personality traits (neuroticism, extraversion, openness to experience, agreeableness and, conscientiousness) are related to primary care patients' perceived need for care while adjusting for the severity of symptoms of depression and anxiety. Because neuroticism is highly associated with health care utilization, we expect a relationship between high neuroticism and perceived need for mental health care. We also expect a difference in personality traits between patients who perceive that their care needs are fully met and patients who are still in need. For example, patients who worry more (related

to neuroticism) might less often perceive that their need is met. Furthermore and in addition to the study of Prins et al.[16], who found that patients with anxiety and depression in primary care mostly perceive that they need information about their mental health problem and counseling, we want to examine the relationship between the specific personality traits and perceived need for specific types of care in general practice: information about the mental health problem, counseling, medication, practical support, skills training and referral to specialized mental health care.

Methods

Design and Sample

Data were derived from the Netherlands Study of Depression and Anxiety (NESDA), a multi-site naturalistic cohort study designed to examine the long-term course of depressive and anxiety disorders. An extensive description of the data collection procedures of NESDA has been reported elsewhere.[17] The design is a longitudinal cohort study with a total of 2,981 respondents; of these 1,002 (33.6%) are male and 1,979 (66.4%) female. The age range is 18-65 years. A total of 1,701 (57.1%) respondents had a 6-month recency anxiety or depressive disorder, 627 (21.0%) respondents had a remitted (lifetime but not current) anxiety or depressive disorder and 652 (21.9%) controls who had no history of a lifetime anxiety or depressive disorder. Recruitment took place between September 2004 and February 2007 in three regions of the Netherlands (Amsterdam, Groningen and Leiden). Participants in the NESDA study were recruited from 1) general population, 2) general practices and 3) mental health care centers in order to recruit participants reflecting various settings and developmental stages of psychopathology. All recruitment procedures were the same regardless of the region or recruitment setting. Exclusion criteria of the study were 1) a primary clinical diagnosis of a psychiatric disorder not subject of NESDA such as psychotic disorder, obsessive compulsive disorder or severe addiction disorder and 2) insufficient knowledge of the Dutch language. All respondents completed a 4-hr assessment containing various physical and mental health aspects and a written informed consent was obtained from all participants. The NESDA study protocol was approved centrally by the Ethical Review Committee of the VU University Medical Center and by local review boards of each participating center. In order to examine whether personality traits are related to perceived need for care in a primary care population we derived data from NESDA. Participants who were recruited from primary care *and* diagnosed with one or more anxiety and/or depression DSM-IV diagnoses with a six-month recency were included. This resulted in 762 participants for our analysis [Table 1].

Measurements

For the current analysis we used baseline interview and self-reported data from the NESDA study on mental health diagnoses, perceived need for care, personality traits, demographic characteristics (sex, age, education level and country of birth), and symptoms of depression and anxiety.

Mental Health Diagnosis

The Composite International Diagnostic Interview[18] was used to assess psychiatric diagnoses defined in the DSM-IV: major depression, dysthymia, social phobia, panic disorder, agoraphobia and generalized anxiety disorder (GAD). This instrument is reliable and valid to assess these disorders.[19] All participants were interviewed by specially trained clinical research staff.

Table 1. Demographic characteristics and DSM-IV diagnoses

Primary Care (*n* = 762)	*n*
Demographics	
Male	225 (29.5%)
Female	537 (70.5%)
Mean age (age range)	45.1 (18-65)
Age categories	
18-24 years	46 (6.0%)
25-44 years	289 (37.9%)
45-65 years	427 (56.1%)
Born in the Netherlands	675 (88.6%)
Education level	
Basic	69 (9.1%)
Intermediate	447 (58.7%)
High	246 (32.3%)
Mean years of education (range)	11.8 (5-18)
Diagnoses	
Depression	179 (23.5%)
- Major depression	146 (81.6%)
- Dysthymia	24 (13.4%)
- Minor depression	29 (16.2%)
Anxiety	293 (38.5%)
- Social Phobia	138 (47.1%)
- Panic with agoraphobia	73 (24.9%)
- Panic without agoraphobia	57 (19.5%)
- Agoraphobia	53 (18.1%)
- GAD	61 (20.8%)
Comorbid depression *and* anxiety	290 (38.0%)

Perceived Need

The Perceived Need for Care Questionnaire (PNCQ) assessed the need from the perspective of the patient for mental health care.[20] The PNCQ is a four-stage questionnaire: (1) a structured enquiry regarding services received over the previous 12 months, (2) an investigation of what types of intervention for mental health problems patients had received, (3) probes whether the provision of each type of intervention received was perceived as adequate or not, and (4) where

interventions were viewed as inadequate, respondents were asked to identify the main reason from a series of possible barriers. The PNCQ distinguishes five forms of care: (1) Information about mental illness, its treatment and available services, (2) Medication; (3) Counseling, psychotherapy or cognitive behavior therapy (hereafter referred to as counseling) to talk about causes of symptoms and learning to cope with emotional problems; (4) Practical support to help to sort out housing or money problems or help with domestic tasks; (5) Skills training to improve one's ability to work, or to use one's time in other ways or help to improve one's ability to look after self or home. For the NESDA study, a sixth category: (6) Referral to a mental health specialist, was added as an extra type of intervention. The PNCQ distinguishes four levels of perceived need[21]: *no need* (patients have no perceived need for care nor receive any treatment), *all need met* (patients receives sufficient treatment), *all need partially met* (patients have a perceived need, but only receive partial treatment), and *unmet need* (patients have a perceived need, but do not receive any treatment). We combined *all need partially met* and *unmet need* and used this as *in need* (patients perceive a need for care and do not, or only partially, receive treatment) [Table 2].

Table 2. Categories of perceived need for care

Perceived need	Description
No need	Patients have no perceived need for care, nor receive any treatment
Met need	Patients receive, as much as perceived, treatment
In need	Patients perceive a need for care and do not, or only partially, receive treatment

Personality Traits

Personality traits were assessed with the NEO-Five Factor Inventory (NEO-FFI). The NEO-FFI[22-24] is a short form version of the NEO-Personality Inventory. It measured the domains of the five-factor model of personality: Neuroticism, Extraversion, Openness to Experience (hereafter referred to as Openness), Agreeableness, and Conscientiousness and included 60 items which each are rated on a 5-point scale ranging from ''strongly disagree'' to ''strongly agree''. The NEO-FFI has demonstrated good internal consistency and test-retest reliability, and has been validated against other personality inventories.[22]

Covariates

Since NESDA has collected a wide range of socio-demographic and clinical status data, we included age, gender, education level, and symptom level of anxiety and depression as covariates in order to control for any differences. We added age, gender and level of education because they are related to perceived need for care (at least for one specific type of care).[16] We also adjusted for the severity of the disorder by including symptom severity, because severity and health care utilization are strongly related.[25] We used the Inventory of Depressive Symptomatology (IDS) to measure depressive symptoms. The IDS consists of 30 items and the total score ranges from 0 to 84, which can be categorized according to severity: 0–13, normal; 14–25, mild depression; 26–38 moderate depression; 39–48, severe depression and 49–84, very severe depression). Internal consistency was high for the IDS (Cronbach's α: 0.92).[26] We assessed anxiety symptoms by using the Beck Anxiety Inventory (BAI). The BAI is a 21-item self-report questionnaire. Sample

items include typical symptoms of anxiety: nervousness, inability to relax, dizziness or light-headedness and heart pounding or racing. Patients recorded how much they have been bothered by each symptom during the past week, including the day the questionnaire was administered. Each item was rated on a 4-point Likert scale ranging from 0 = not at all to 3 = severely: I could barely stand it. The total score ranges from 0 to 63. The following guidelines are recommended for the interpretation of scores: 0–9, normal or no anxiety; 10–18, mild to moderate anxiety; 19–29, moderate to severe anxiety and 30–63, severe anxiety.[27]

Statistical Analysis

We performed a multinomial logistic regression to retrieve the odds-ratios for the different outcome categories ('*no need*', '*met need*' and '*in need*'). The perceived need groups (*no need*; *met need*; *unmet need*) were used as outcome variable. All specific treatments were also presented separately (information, medication, counseling, practical support, skills training and referral). Personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness) were presented separately and to adjust for correlations between the traits they were added as covariates. In the multinomial logistic regression we used symptoms of depression and anxiety as covariates to adjust for the severity of symptoms. Furthermore, we adjusted for possible confounders, which are related to perceived need for care, and added age as a covariate and gender and level of education as factors. All analyses were performed in SPSS 17.0.1.

Results

Participants

For this study we included 762 primary care patients. The mean age was 45.1 (SD = 12.1) years with a range of 18-65 years. Of these patients 70.5% was female and 88.6% of the participants was born in the Netherlands. All patients were diagnosed with one or more DSM-IV disorders: 23.5% with pure depression, 38.5% with pure anxiety and 38.0% with comorbid disorders [Table 1]. Of all patients 196 (25.7%) had no perceived need for care, 142 (18.6%) were fully met in their perceived need and 424 (55.6%) were in need of care.

Mental Health Diagnosis and Perceived Need for Care

Of the patients who were diagnosed with pure depression 25.1% perceived no need for care, 19.6% perceived that their need was fully met and 55.3% perceived that they needed mental health care. Counseling was most often (34.6%) perceived as needed and practical support was perceived as least needed by (90.5%). Of the patients who were diagnosed with pure anxiety 40.3% perceived no need for care, 17.4% perceived that their need was fully met and 42.3% perceived that they needed mental health care. Comparable to depression, most people perceived that they needed counseling (23.5%) while practical support was least perceived as needed (7.8%). Of the patients diagnosed with comorbid disorders only 11.4% perceived no need for care, 19.3% perceived that their need was fully met and 69.3% perceived that they needed mental health care. A substantial fraction of the patients was in need of information (38.3%) or counseling (42.1%). Notable is that only between 7% and 14% of the patients perceived that they needed medication. Furthermore, a noticeable high number, between 45% and 68% of patients, did not perceive referral as needed [Table 3].

Table 3. DSM-IV diagnosis and perceived need per type of treatment

		Any need	**Information**	**Medication**	**Counseling**	**Practical Support**	**Skills**	**Referral**
		n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
Depressive disorders	No need	45 (25.1)	82 (45.8)	124 (69.3)	79 (44.1)	162 (90.5)	140 (78.2)	104 (58.1)
	Met need	35 (19.6)	44 (24.6)	42 (23.5)	38 (21.2)	2 (1.1)	11 (6.1)	36 (20.1)
	In need	99 (55.3)	53 (29.6)	13 (7.3)	62 (34.6)	15 (8.4)	28 (15.6)	39 (21.8)
Anxiety disorders	No need	118 (40.3)	175 (59.7)	226 (77.1)	179 (61.1)	270 (92.2)	256 (87.4)	201 (68.6)
	Met need	51 (17.4)	55 (18.8)	44 (15.0)	45 (15.4)	5 (1.7)	5 (1.7)	44 (15.0)
	In need	124 (42.3)	63 (21.5)	23 (7.8)	69 (23.5)	18 (6.1)	18 (6.1)	48 (16.4)
Comorbid disorders	No need	33 (11.4)	120 (41.4)	143 (49.3)	102 (35.2)	239 (82.4)	219 (75.5)	131 (45.2)
	Met need	56 (19.3)	59 (20.3)	108 (37.2)	66 (22.8)	7 (2.4)	11 (3.8)	66 (22.8)
	In need	201 (69.3)	111 (38.3)	39 (13.4)	122 (42.1)	44 (15.2)	60 (20.7)	93 (32.1)

Table 4. Multinomial logistic regression: The effects of personality traits on perceived need for care (adjusted for symptoms of depression and anxiety).

		Neuroticism			Extraversion			Openness			Agreeableness			Conscientiousness		
		OR	95% CI	*P*	OR	95% CI	*P*	OR	95% CI	*P*	OR	95% CI	*P*	OR	95% CI	*P*
Any need	No need* (*n* = 196; 25.7%)	ref														
	Met need (*n* = 142; 19.6%)	1.06	1.01-1.10	**0.01****	1.01	0.96-1.05	0.78	1.03	0.99-1.08	0.10	1.04	0.99-1.09	0.11	1.02	0.98-1.06	0.33
	In need (*n* = 424; 55.6%)	1.05	1.01-1.09	**0.01****	1.00	0.97-1.04	0.93	1.04	1.01-1.08	**0.02****	1.04	1.00-1.08	0.07	1.00	0.96-1.03	0.91
Information	No need* (*n* = 377; 49.5%)	ref														
	Met need (*n* = 158; 20.7%)	1.04	1.00-1.08	**0.04****	1.02	0.98-1.06	0.32	1.02	0.99-1.06	0.22	1.05	1.01-1.09	**0.02****	1.01	0.98-1.05	0.52
	In need (*n* = 227; 29.8%)	1.05	1.01-1.08	**<0.01****	1.02	0.99-1.06	0.18	0.99	0.96-1.02	0.59	1.05	1.01-1.09	**<0.01****	0.99	0.96-1.02	0.55
Medication	No need* (*n* = 493; 64.7%)	ref														
	Met need (*n* = 194; 25.5%)	1.01	0.98-1.05	0.48	1.00	0.97-1.04	0.80	0.99	0.96-1.02	0.36	1.04	1.01-1.08	**0.02****	1.02	0.99-1.05	0.30
	In need (*n* = 75; 9.8%)	1.01	0.96-1.06	0.83	0.99	0.94-1.03	0.54	0.99	0.95-1.03	0.56	1.00	0.95-1.05	0.95	1.02	0.97-1.06	0.43
Counseling	No need* (*n* = 360; 47.2%)	ref														
	Met need (*n* = 149; 19.6%)	1.05	1.01-1.10	**<0.01****	0.99	0.95-1.03	0.61	1.05	1.02-1.09	**<0.01****	1.03	0.99-1.07	0.16	1.05	1.01-1.08	**0.01****
	In need (*n* = 253; 33.2%)	1.05	1.02-1.09	**<0.01****	1.00	0.97-1.03	0.95	1.04	1.01-1.07	**0.01****	1.03	1.00-1.07	0.08	1.02	0.99-1.05	0.20
Practical Support	No need* (*n* = 671; 88.1%)	ref														
	Met need (*n* = 14; 1.8%)	0.97	0.87-1.08	0.61	0.97	0.88-1.08	0.61	1.08	0.99-1.19	0.09	1.07	0.96-1.19	0.23	0.97	0.88-1.06	0.48
	In need (*n* = 77; 10.1%)	1.04	0.98-1.09	0.18	1.01	0.96-1.06	0.78	1.01	0.97-1.06	0.59	1.04	0.99-1.10	0.09	0.93	0.89-0.97	**<0.01****
Skills	No need* (n = 615; 80.7%)	ref														
	Met need (n = 27; 3.5%)	1.04	0.96-1.12	0.33	1.03	0.96-1.11	0.44	1.12	1.04-1.20	**<0.01****	0.99	0.91-1.07	0.80	1.02	0.96-1.09	0.55
	In need (*n* = 120; 15.7%)	0.99	0.96-1.04	0.92	1.03	0.99-1.07	0.15	1.07	1.03-1.11	**<0.01****	1.01	0.97-1.05	0.73	0.95	0.92-0.99	**<0.01****
'Referral'	No need* (*n* = 436; 57.2%)	ref														
	Met need (*n* = 146; 19.2%)	1.04	1.00-1.08	**0.03****	1.02	0.98-1.06	0.29	1.00	0.96-1.03	0.84	1.03	0.99-1.07	0.14	1.04	1.00-1.07	**0.05****
	In need (*n* = 180; 23.6%)	1.01	0.98-1.05	0.51	1.02	0.99-1.06	0.23	0.97	0.94-1.00	0.07	1.01	0.97-1.05	0.68	0.99	0.96-1.03	0.68

*First group is the reference-group (ref) **Significant at 0.05

Personality Traits and Perceived Need for Care

The multinomial regression gave the odds ratios for perceived need for care groups per type of treatment on personality traits while adjusting for depression and anxiety scores, gender, age and education level [Table 4].

Neuroticism

We found a significant odds ratio for neuroticism and the outcome category *met need* relative to *no need* (odds ratio (OR) = 1.06; 95% CI = 1.01 to 1.10; *P* = 0.01) indicating that the risk of falling in the *met need* group relative to the *no need* group is larger for patients scoring higher on neuroticism. More precisely, if the neuroticism score goes up with one point, the odds of falling into the *met need* group relative to the no need group increases with a multiplicative factor of 1.06. Also the risk of falling in the *in need* group relative to the *no need* group was found to be higher for patients that score higher on neuroticism (OR = 1.05; 95% CI = 1.01 to 1.09; *P* = 0.01).

Patients with higher scores on neuroticism were more likely to already have received information (*met need*) and also more likely to be *in need* for information (resp.: OR = 1.04; 95% CI = 1.00 to 1.08; *P* = 0.04 and OR = 1.05; 95% CI = 1.01 to 1.08; *P* < 0.01) than those that did not require information (*no need*). A similar result was found when perceived need for counseling was taken as the outcome measure (*met need* relative to *no need*: OR = 1.05; 95% CI = 1.01 to 1.10; *P* < 0.01; *in need* relative to *no need*: OR = 1.05; 95% CI = 1.02 – 1.09; *P* < 0.01). The risk of having a *met need* for referral to specialized mental health care relative to perceived *no need* for referral also increased with neuroticism (OR = 1.04; 95% CI = 1.00 to 1.08; *P* = 0.03).

Extraversion

We found the risk of having *met need* or being *in need* (relative to *no need*) to be unrelated to extraversion. When we specified the types of treatment, we still did not find any significant difference in risks [Table 4].

Openness

The risk of falling in the *in need* group relative to the *no need* group was found to be larger for patients scoring higher on openness (OR = 1.04; 95% CI = 1.01 to 1.08; *P* = 0.02). Patients with higher scores on openness were more likely to already have received counseling (*met need*) and also more likely to be *in need* for counseling (respectively OR = 1.05; 95% CI = 1.02 to 1.09; *P* < 0.01 and OR = 1.04; 95% CI = 1.01 to 1.07; *P* = 0.01). A similar result was found when perceived need for skills training was taken as the outcome measure (*met need* relative to *no need*: OR = 1.12; 95% CI = 1.04 to 1.20; *P* < 0.01; *in need* relative to *no need*: OR = 1.07; 95% CI = 1.03 to 1.11; *P* <0.01).

Agreeableness

We found the risk of having *met need* or being *in need* (relative to *no need*) to be unrelated to agreeableness. When types of treatment were specified, we found that patients with higher scores on agreeableness were more likely to already have received information (*met need*) and also more likely to *be in need* for information (resp., OR = 1.05; 95% CI = 1.01 to 1.09; *P* = 0.02

and OR = 1.05; 95% CI = 1.01 to 1.09; $P < 0.01$) than those who did not require information (*no need*). Risk of having a *met need* for medication relative to perceived *no need* for medication also increased with agreeableness (OR = 1.04; 95% CI = 1.01 to 1.08; $P = 0.02$).

Conscientiousness

We found the risk of having *met need* or being *in need* (relative to *no need*) to be unrelated to conscientiousness. When we specified different types of treatment we found that the risk of having a *met need* for counseling relative to perceived *no need* for counseling increased with conscientiousness (OR = 1.05; 95% CI = 1.01 to 1.08; $P = 0.01$). When perceived need for practical support was taken as the outcome measure the risk of having a need (*in need*) relative to *no need* decreased with conscientiousness (OR = 0.93; 95% CI = 0.89 to 0.97; $P < 0.01$). The relative risk of having a need (*in need*) for skills training, relative to *no need* for skills training, decreased with conscientiousness (OR = 0.95; 95% CI = 0.92 to 0.99; $P < 0.01$). Risk of having a *met need* for referral to specialized mental health care relative to perceived *no need* for referral increased with conscientiousness (OR = 1.04; 95% CI = 1.00 to 1.07; $P = 0.05$).

Discussion

We found indications that personality traits, in particular neuroticism and openness, have impact on care needs independent of the severity of the disorders. A perceived need for care (whether this was met or not) was more likely to be present in patients with higher levels of neuroticism and openness. When patients have higher levels of neuroticism or higher levels of openness counseling is most likely to be perceived a as needed. Extraversion, agreeableness and conscientiousness did not seem to have impact on the perceived need for care.

As expected neuroticism has impacts on perceived need for care. Individuals with higher neuroticism appear to be less capable of certain tasks such as solving problems or avoiding feelings of distress.[28] A study of Tyssen et al.[29] demonstrated that patients who sought help had higher levels of emotional distress than those who did not. Neuroticism also predicts the use of primary care for mental health problems[14,15], but more visits were only made by clients with high neuroticism and emotional disorder.[14] Therefore, we can conclude that neuroticism is an important aspect in help-seeking behavior.

Unexpectedly, patients with higher levels of openness were more likely to seek help. This might have a link with three of the six elements of openness: feelings, actions and ideas (intellect). These patients might be more open to change their feelings, more willing to change their behavior and able to value their emotions and ideas.

Furthermore and contrary what we expected, there were no differences in personality traits between patients who perceive that their care needs are fully met and patients who are still in need.

Type of Treatment

Around 30% of the patients perceived a need for information about their disorder(s). Offering information about their disorders seems suitable for primary care, unless patients are not recognized as having a mental health disorder. Most patients (between 24% and 42%)

expressed a need for counseling, which could be offered for example as brief therapies by practice nurses in primary care.

In primary care, a substantial number of patients receive medication for anxiety and/or depressive disorders.[30-32] This is remarkable since only 30% of patients with depression and 25% of patients with anxiety expressed a need, irrespective whether or not this is met, and furthermore because patients prefer psychological treatment.[33] We found that patients who scored higher on agreeableness were more likely to have met needs for medications relative to patients without a need. A possible explanation can be that patients who are more agreeable follow the advice for treatment of their GP instead of expressing their own needs and wants.

Only few patients (20%) are referred to specialized mental health care[34], this corresponds to the fraction of patients that perceived that their need for referral was met. The risk of having a met need for referral to specialized mental health care relative to no need increased with higher levels of neuroticism and conscientiousness. Medical school students with high levels of neuroticism and high levels of conscientiousness were at risk of experiencing more stress.[35] If the same holds for depressed or anxious patients, their GP might diagnose them as such more easily and, as a consequence they would also be referred more often.

Implications and Future Research

It is important to investigate the association between neuroticism, common mental health disorders and mental health care utilization. The economic costs of neuroticism are enormous and exceed those of common mental disorders.[36]

The perception of need for care is an important, but nevertheless subjective, aspect in the actions into help seeking behavior. Many individuals who have common mental health problems do not think they need treatment. Our results show that for pure anxiety disorders this can be as many as 40% of the patients. A possible reason could be that individuals may not perceive a need for care because they do not recognize their symptoms as a mental health problem, which was found to be an important determinant of help-seeking behavior.[15] Patients who *do* perceive a need for care have higher levels of neuroticism than patients without a perceived need for care. Neurotic patients might need more care, but it is important to explore the justification of the perceived need of neurotic patients. Do people with high levels of neuroticism really need more care than patients with lower levels of neuroticism? Or are these patients rather dissatisfied with treatment in general *because* they are neurotic? If this is the case, neuroticism might place burden on the care system because neurotic patients might require and receive unnecessary treatment. The enormous societal costs of neuroticism are partly caused by health care utilization.[36] Therefore, to lower these costs, future research should explore if different or additional treatment is needed for neurotic patients. Overtreatment of patients is undesirable considering the current cost cutting in health care. However, the professionals' perspective on the need of care is also important. If patients suffer from a moderate to severe DSM-IV diagnosis, this might be an indication that mental health care is needed. This ethical issue on which patients should be treated when should be addressed before any practical and clinical implications can be described. Future research should focus on the justification of treatment in neurotics. A recommendation is to explore the difference(s) between the perceived need of the professional and the perceived need of the patient.

Furthermore, the relationship between perceived need for care from the patients' perspective and the course of treatment should be explored. Neurotic patients might be dissatisfied with mental health care and therefore drop out of interventions more often than patients with lower levels of neuroticism. However, neurotic patients might have a persistent need for care and therefore they continue to utilize care longer than usual.

Limitations

This study has some limitations. The conclusions are based on data from a cross-sectional study, meaning that no cause-effect relationships can be found. The assessments of the NESDA-study will be repeated so longitudinal data will be available in a few years. A second limitation is that we included patients with a depressive or anxiety disorder but we were not able to adjust for other disorders, for example personality disorders. However, the presence of clinically recognized personality disorder was an exclusion criterion for the NESDA study, so it is unlikely that many personality disorders exist in this sample. Another limitation is that patients were asked whether they needed certain services if they did not receive them. However, we did not measure whether patients think that the received services were unnecessary, excessive or unwanted. Consequently, patients' views about overuse of care, or what type of help is unwanted, remain unclear.[16] Finally, the concepts of neuroticism and depression are highly correlated (R = 0.72 between NEO-FFI and BDI).[37] The questionnaires might not perfectly assess the difference between these concepts, which might have led to an overestimation of the association between neuroticism and perceived care need.

Conclusions

Personality has, regardless of the severity of anxiety and depression, impact on the perceived need for care. This seems to be true mainly for neuroticism and openness. Patients with higher scores on these personality traits were more likely to have a perceived need for care, irrespective whether this was met or not. To tackle the problems of overtreatment and undertreatment one should focus on various aspects such as burden of the disease, perceived care need, but also the personality characteristics of the patients and specifically tailor (preventive) interventions.

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